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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,080	09/05/2003	Heribert Vogel	Hss-30	1855

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EXAMINER	
VERDIER, CHRISTOPHER M	

ART UNIT	PAPER NUMBER
3745	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/656,080	VOGEL, HERIBERT	
	Examiner	Art Unit	
	Christopher Verdier	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *6-8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 9-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3-19-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restrictions

Claims 6-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 9, 2005.

Drawings

The drawings are objected to because figures 1a, 1c, 1e, and 1f each contain plan and sides views in the same figure, which should be labeled as separate figures. Applicant is reminded to amend the descriptions of the drawings accordingly. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "A" (figures 1a, 1c, and 1e). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because figure 1c (top portion) and figure 1f(top portion) are replete with reference numerals that are incorrect; for example, "1" should be changed to -- 101 --, "2" should be changed to -- 102 --, "3" should be changed to -- 103 --, etc. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and

appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because it contains the phrase "The invention relates to" (line 3) and "According to the invention" (lines 6-7) which are implied and should be deleted, and because in line 10, the legal term "Said" should be deleted. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: Appropriate correction is required.

On page 3, line 13, the reference to claim 1 is objectionable and should be deleted.

On page 12, line 6, -- has -- should be inserted after "has".

Examiner's Suggestions to Claim Language

The following are suggestions to improve the clarity and precision of the claims:

In claim 5, line 4, "the" may be changed to -- a --.

In claims 15 and 16, line 7, "at least two" may be deleted.

Claim Objections

Claims 9-12, 15-16, and 18-21 are objected to because of the following informalities: Appropriate correction is required.

In claim 9, line 3, "in" (second occurrence) should be changed to -- of --.

In claim 12, line 2, "claimtwo" should be changed to -- claim two --.

In claim 15, line 3, "(collective blade pitch)" should either be deleted, or the parentheses should be removed and the claim amended accordingly.

In claim 16, line 3, "(aircraft pitch and/or roll)" should either be deleted, or the parentheses should be removed and the claim amended accordingly.

In claim 18, line 3, "(collective blade pitch)" should either be deleted, or the parentheses should be removed and the claim amended accordingly.

In claim 19, line 3, "(aircraft pitch and/or roll)" should either be deleted, or the parentheses should be removed and the claim amended accordingly.

In claim 21, line 3, "(collective blade pitch)" should either be deleted, or the parentheses should be removed and the claim amended accordingly.

In claim 19, line 3, "(pitch and/or roll)" should either be deleted, or the parentheses should be removed and the claim amended accordingly.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 and 9-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, lines 1-2, "in particular a remotely controllable ultralight model helicopter" is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). In claim 4, lines 5 and 7, and claim 5, lines 2-3, reference is made to "a connecting bracket". This is inaccurate, because the connecting bracket is one and the same element as the lever recited in claim 1, line 7. In claim 18, line 5, "in particular a pulsed DC voltage" is unclear whether the limitation(s) following the phrase are part of the claimed invention. In claim 19, lines 5-6, "in particular a pulsed AC voltage" is unclear whether the limitation(s) following the phrase are part of the claimed invention. Claim 23, lines 3-5 are incomplete and thus unclear. In claim 24, line 2, "in particular an ultralight model helicopter" is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 9-10, 12-13, 17-18, 22, and 24, as far as they are definite and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over either (World Order Patent 85/02349

or Japanese Patent 3-16,897) in view of United Kingdom Patent 2,149,372. The World Order Patent (figure 1) and the Japanese Patent (figure 1) disclose remotely controlled helicopters having respective rotor blades 7, 1a, but do not disclose that at least one rotor blade is formed such that the angle of incidence is adjustable by means of at least one lever acting on the rotor blade by a force produced through a magnetic field which can be varied through the electric drive of at least one coil (claim 1), the magnetic field being produced at least one permanent magnet and by the at least one coil (claim 2), the at least one coil driven in a pulsed manner (claim 3), with the force that causes the adjustment of the angle of incidence of the rotor blade being transmitted as a torsion force to the rotor blade via a connecting bracket which is hinged on the rotor blade such that the position of the connecting bracket defines the angle of incidence of the rotor blade (claim 4), the connecting bracket being capable of being pivoted about an axis at right angles to a rotor rotation shaft (claim 5), the force that results in the adjustment of the angle of incidence of the rotor blade being transmitted via at least one push rod (claim 9), the push rod being hinged on the connecting lever (claim 10), with the at least one coil being arranged on a non-rotating element of the aircraft, adjacent to the permanent magnet (claim 12), with the rotor blades having angles of incidence that can be adjusted independently of one another, each of the at least two rotor blades having at least one associated coil (claim 13), with the rotor blades having at least two rotor blades whose angles of incidence can be adjusted in a coupled manner (claim 17), with a lift component which is coaxial with respect to a main rotor shaft being controlled by applying a DC voltage to the coil (claim 18), with the coil being driven completely digitally (claim 22), and a kit for producing the remotely controlled aircraft (claim 24).

United Kingdom Patent 2,149,372 (figure 2) shows a helicopter rotor blade pitch control arrangement, whereby at least one rotor blade 119a, 119b is formed such that the angle of incidence is adjustable by means of at least one lever (the element connected to pushrod ends 129a, 129b may be considered to be a lever, or alternatively elements 127a, 127b may be considered to be levers) acting on the rotor blade by a force produced through a magnetic field which can be varied through the electric drive of at least one coil of brushless electric motors 131a, 131b, the magnetic field being produced at least one permanent magnet and by the at least one coil. (Note that all brushless electric motors have their magnetic field produced by at least one permanent magnet and by the at least one coil). The force that causes the adjustment of the angle of incidence of the rotor blade is transmitted as a torsion force to the rotor blade via a connecting bracket (the element connected to pushrod ends 129a, 129b) which is hinged on the rotor blade such that the position of the connecting bracket defines the angle of incidence of the rotor blade, the connecting bracket being capable of being pivoted about an axis at right angles to a rotor rotation shaft. The force that results in the adjustment of the angle of incidence of the rotor blade is transmitted via at least one push rod 127a, 127b, the push rod being hinged on the connecting lever, and the at least one coil is arranged on a non-rotating element of the aircraft 110, adjacent to the permanent magnet. The rotor blades have angles of incidence that can be adjusted independently of one another via drive shafts 125a, 125b, and each of the at least two rotor blades having at least one associated coil provided by electric motors 131a, 131b. A lift component that is coaxial with respect to a main rotor shaft is controlled by applying a DC

voltage to the coil. The arrangement is provided for the purpose of reducing the mechanical complexity of the helicopter blade pitch control.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the helicopters of either World Order Patent 85/02349 or Japanese Patent 3-16,897 with the blade pitch control arrangement of United Kingdom Patent 2,149,372, for the purpose of reducing the mechanical complexity of the helicopter blade pitch control.

With regard to the recitation of the at least one coil driven in a pulsed manner (claim 3), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to drive the electric motors in a pulsed manner, for the purpose of making small blade adjustments, because pulsing the electric motors would permit the blades to be moved to multiple positions. With regard to the recitation of the rotor blades having at least two rotor blades whose angles of incidence can be adjusted in a coupled manner (claim 17), this is a recitation of intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). The blade pitch control apparatus of United Kingdom Patent

2,149,372 is capable of having at the least two rotor blades whose angles of incidence can be adjusted in a coupled manner.

With regard to the recitation of the coil being driven completely digitally (claim 22), Official Notice is taken that electric motors are conventionally digitally driven, for the purpose of providing accurate control of the electric motors. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to drive the electric motors completely digitally, for the purpose of providing accurate control of the electric motors.

With regard to the recitation in claim 24 of the kit for producing the remotely controlled aircraft (claim 24), Official Notice is taken that kits are commonly marketed to improve an existing product or to allow self-assembly of a product. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the modified rotor blade pitch control arrangement as a kit, for the purpose of improving the existing helicopter or to allow self-assembly of the helicopter.

Allowable Subject Matter

Claims 11, 14-16, and 19-21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

No meaningful determination may be made with respect to claim 23 at this time, due to the indefinite nature of the claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
April 29, 2005

Christopher Verdier
Primary Examiner
Art Unit 3745